Replace the paragraph beginning on page 7, line 21 through page 8, line 1 with the following:

To determine the calibration constants, the algorithm first searches the spectrum for peaks significantly above the background. The centroids of these peaks are matched to a specified pattern to identify the individual peaks. Then, a linear least square fit of experimental peak energies versus expected peak energies is performed to determine the three constants.

Replace the paragraph beginning on page 45, line 15 through page 46, line 13 with the following:

After all the peaks from the element have been processed, the conf_array is used to determine the overall confidence of that element. This is accomplished by a confidence table being created for each element. The table contains a series of conf_array values that must be met or exceeded to meet that confidence level. For example, to achieve a 50% confidence level, 2 peaks with 20% or less error along with 3 peaks of 60% or less error may be required (e.g. (2,0,1,0,0)). There are approximately 7 distinct table entries that are checked against the conf_array values. The first one that is met or exceeded determines the overall confidence measure for that element. A confidence level is assigned to each of the table entries in the confidence table and the highest level met or exceeded is used in reporting the confidence of the element. For example, if the conf_array is [2,0,1,1,0] as described above, and the confidence table is [[4,0,0,0,0], [3,1,0,0,0], [1,1,1,0,0], [0,1,2,0,0], [0,0,3,0,0], [0,0,2,1,0], [0,0,1,2,0]], then the third confidence level would be met [1,1,1,0,0]. At a minimum, one peak with less